

CLAIM AMENDMENTS:

Please amend the claims as follows:

1-8. (Cancelled):

9. (Previously presented) A multilevel texture processing method for mapping an image onto a 3D model with a texture mapping, the method comprising the steps of:

- providing the image to the 3D model;
 - converting the image and the texture mapping to a common spatial coordinate system and dividing them into a plurality of polygons;
 - comparing the image with the texture mapping within the spatial coordinate system to extract overlapped polygons;
 - using the pixel intensity of the overlapped polygons to compute a statistics mean for adjusting the pixel intensity of the image accordingly;
 - using a prescribed condition to select the texture of one of the image and the texture mapping as the texture of the polygon;
 - smoothing the texture of the polygon;
 - making the pixels inside the polygon continuous; and
 - restoring the polygon and storing the 3D model in memory,
- wherein the pixel intensity of the image is adjusted by a formula:

$$I'_s(x_i, y_i) = I_s(x_i, y_i) - \mu_s + \mu_b,$$

μ_s representing the averaged pixel intensity of the overlapped polygons on the 3D model, μ_b representing the averaged pixel intensity of the overlapped polygons of the input image, $I_s(x_i, y_i)$ representing the pixel intensity of each point on the 3D

model, and $I'_s(x_i, y_i)$ representing the adjusted pixel intensity of each point on the 3D model.

10. (Previously presented) The method of claim 9, wherein the prescribed condition is selected from the group consisting of resolution, polygon orientation, and camera viewing perspective.

11. (Previously presented) The method of claim 9, wherein the step of smoothing the texture of the polygon includes texture normalization and texture blurring.

12. (Previously presented) The method of claim 11, wherein the texture normalization uses the pixel intensities of the polygons in both the image and the texture mapping to compute a weighted average for adjustment.

13. (Previously presented) The method of claim 12, wherein the weighted average for adjustment is computed by a formula:

$$T'_s(x_i, y_i) = T_s(x_i, y_i) - \mu_s + \mu_b,$$

μ_s representing the averaged pixel intensity of the overlapped polygons on the 3D model, μ_b representing the averaged pixel intensity of the overlapped polygons of the input image, $T_s(x_i, y_i)$ representing the texture pixel intensity at each point in the polygon, and $T'_s(x_i, y_i)$ representing the adjusted texture pixel intensity at each point in the polygon.

14. (Previously presented) The method of claim 11, wherein the texture blurring uses the textures of the polygon and its neighboring polygons to compute a weighted average for adjustment.

15. (Previously presented) The method of claim 9, wherein the step of making the pixels of the polygon texture continuous is achieved by mixing colors with the neighboring polygons.

16. (Previously presented) The method of claim 15, wherein the step of mixing colors includes the steps of:

extracting a pixel on the border of the polygon with discontinuous colors;
and

computing a weighted average of the intensities of the pixel and its nearest neighboring pixels as a new intensity of the pixel.

17. (Previously presented) The method of claim 16, wherein the step of computing a weighted average of the intensities of the pixel and its neighboring pixels as a new intensity of the pixel is followed by the steps of:

computing the difference between the weighted average intensity and the original pixel intensity; and

using the pixel intensity difference to adjust the intensities of the rest of the pixels inside the polygonal texture.

18. (Previously presented) The method of claim 17, wherein the intensities of the rest of the pixels inside the polygonal texture is adjusted by a formula:

$$T'_s(x, y) = T_s(x, y) + \sum_{i=1}^N w_i \cdot Id_i$$

w_i representing a relevant weight, I_d representing the pixel intensity difference, N representing the number of total adjustments, $T_s(x_i, y_i)$ representing the pixel intensity of each point on the 3D model, and $T'_s(x_i, y_i)$ is the adjusted pixel intensity of each point on the 3D model.